



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,281	07/20/2000	Dong-Hoon Lee	3430-0126P	4261
2292	7590	10/13/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			NGUYEN, HOAN C	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/621,281

Applicant(s)

LEE, DONG-HOON

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-5, 7-13 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 22, 2004 has been entered.

Applicants cancelled claims 6 and 14. Therefore, claims 1-5, 7-13 and 15-17 are still pending.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5, 7-13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (US6295109B1) in view of Taiji (JP3228027).

In regard to claims 1 and 10, (Figs 2-3 and 21-22) a transfective liquid crystal display device comprising:

- a transflective liquid crystal display panel having a first transparent substrate (counter substrate), a second transparent substrate (an active-matrix substrate),
- a liquid crystal layer interposed between the first and second transparent substrates as shown in Fig. 2,
- the first transparent substrate having a color filter (col. 48 lines 7-12, it was conventional that color filter is formed on counter substrate for color display),
- the second transparent substrate having a pixel electrode 54 and a reflector,
- the reflector 52 made of an opaque conductive material (claim 4), and having a light transmitting hole which the pixel electrode 54 covers, the light transmitting hole transmitting light;
- a back light device (col. 13 lines 24-32).

wherein

- each pixel region is divided into reflective and transmissive portions (Fig. 21) and a reflection brightness of the transflective liquid crystal display device is improved due to a first reflected light at the reflector of the reflective portion (region R).
- the reflector is made of an opaque (block light) conductive material of aluminum (col. 50 lines 33-35) according to claims 4 and 12;
- the pixel electrode is made of indium-tin oxide (col. 49 lines 34-35) according to claims 5 and 13.
- the hole has a rectangular shape as Fig. 21 shown according to claim 9 and 17;

However, Kubo et al. fail to disclose a transfective film located outside of the second transparent substrate of the liquid crystal display panel, and the transfective film is made of a transmissive material with reflective material scattered therein, wherein (a) transmissive material is made of acrylic-based resin according to claims 3 and 10, (b) the reflective material of the transfective film is selected from a group consisting of Ag and Al according to claims 2 and 11 and concentration of the reflective material scattering on a surface of the transfective film is adjusted according to main mode of the transfective liquid crystal display device; (c) the transfective liquid crystal display device has a reflective main mode, and the concentration of the reflective material is increased according to claims 7 and 15; (d) the transfective liquid crystal display device has a transmissive main mode, and the concentration of the reflective material is decreased according to claims 8 and 16.

Taiji teaches (Figs. 1-3) the transmissive LCD device, wherein

- a transfective film (diffusion plate 2) located outside of the second transparent substrate of the liquid crystal display panel 1, and the transfective film is made of a transmissive material of acrylic resin (milky white acrylic resin 6) with reflective material (aluminum particles 7) scattered therein and concentration of the reflective material scattering on a surface of the transfective film is adjusted according to main mode of the transfective liquid crystal display device as described in graph (Fig. 3) for improving display quality. Therefore, a reflection brightness of the transfective liquid crystal display device is improved due to the

second reflected light at the transflective film of the transmissive portion (region T) to improve display quality.

- the concentration of aluminum particle can be adjusted to modulate transmission, reflection and absorption as Fig. 3 shown according to claims 6 and 14.
- the transflective liquid crystal display device has a reflective main mode, and the concentration of the reflective material is increased as shown in Fig. 3 according to claims 7 and 15.
- the transflective liquid crystal display device has a transmissive main mode, and the concentration of the reflective material is decreased as shown in Fig. 3 according to claims 8 and 16.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a transflective liquid crystal display device as Kubo et al. disclosed with (a) a transflective film located outside of the second transparent substrate of the liquid crystal display panel, and the transflective film is made of a transmissive material with reflective material scattered therein, wherein the reflective material of the transflective film is selected from a group consisting of Ag and Al for producing bright picture; (b) a concentration of the reflective material scattered on a surface of the transflective film is adjusted for modulating transmission, reflection and absorption.

***Response to Arguments***

Applicant's arguments filed on 7/22/2004 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

1. Taiji fails to pertain to transflective liquid crystal device. Instead, Taiji pertains to translucent liquid crystal device (page 9, second paragraph).
2. Neither kubo nor Taiji disclose or suggest the reflective material on surface of the transmissive material (page 11 lines 3-4).

Examiner's responses to Applicants' ONLY arguments are follows:

1. Transflective liquid crystal device comprises reflective portion and transmitting portion.

Claims 1 and 10 recite "*a transflective film located outside of the second transparent substrate of the liquid crystal display panel **around a location corresponding to the light transmitting hole (portion)**, made of a transmissive material with reflective material scattered scattered therein*" and "*concentration of the reflection material scattered on a surface of the transflective film is adjusted according to a main mode of the transflective liquid crystal display device*". Therefore, **transflective film will control light passing through the transmissive portion/hole**. In the same scenario, **Taiji disclose the transmissive-type LCD with the diffusing plate 2 for improving display quality** (where translucent means transmitting light with diffusing). This transflective film locates around the transmitting portion/hole. Therefore, it would

have been obvious to one having ordinary skill in the art at the time the invention was made to further modify transmitting portion (hole) of the transfective-LCD with a transfective film (diffusing film) **for improving display quality at the transmissive portion (hole).**

However, in the instant application, the transfective film as Fig. 6 shown is made of acrylic resin and scattering reflective particles, therefore the transfective film will also diffuse light and act like diffusive film as Taiji disclosed in Figs. 2-3. Therefore, this transfective film in the instant application will have transmissive, reflective and absorption properties as the diffusing plate of Taiji. **Applicant may provide an affidavit with data to show that the transfective film as Fig. 6 is not diffusing light or translucent.**

2. Taiji discloses (Fig. 2) the diffusing plate with the reflective material (aluminum) on surface of the transmissive material with **acrylic resin, which is same material using in the instant application.** The diffusing plate of Taiji is made of acrylic resin and aluminum particles, which are the same materials made the transfective film of the instant application. **Therefore, diffusing plate of Taiji must have same function as transfective film of the instant application.**

However, if milky-white acrylic resin in Taiji is not transparent, the light source cannot pass the light through the liquid crystal display panel 1; and the transmissive-

type LCD device of Taiji could not function. Therefore, milky-white acrylic resin must be transparent with a low concentration of aluminum particles as shown in Fig. 3.

### ***Conclusion***

This is a continuation of applicant's earlier Application No. 09/621,281. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571)

Art Unit: 2871

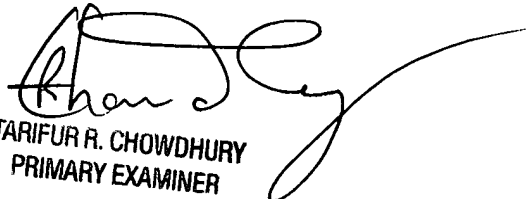
272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

chn

  
TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER